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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,505	04/06/2001	Elliott P. Dawson	12056-2	7931

23676 7590 04/07/2005

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EXAMINER	
TRAN, MY CHAU T	
ART UNIT	**PAPER NUMBER**
1639	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/827,505	DAWSON ET AL.	
	Examiner	Art Unit	
	MY-CHAU T. TRAN	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-16,18,19,21-24,28 and 35-38* is/are pending in the application.

4a) Of the above claim(s) *21-24 and 35-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-16,18,19 and 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Applicant's response filed 12/16/2004 is acknowledged and entered.

2. Claims 29-34 were canceled; Claims 11, and 18 were amended; and Claims 35-38 were added by the amendment filed on 11/24/03 and 12/17/03.

3. Claim 17 was canceled by the amendment filed on 9/10/03.

4. Claims 20, and 25-27 were canceled by the amendment filed on 6/12/03.

5. Claims 1-10 were canceled by the amendment filed on 12/10/02.

6. Claims 11-16, 18-19, 21-24, 28, 35-38 are pending.

Election/Restrictions

7. Applicant has elected the following species for the elected invention (Claims 11-16, 18-19, 21-24, 28, 35-38) in the reply filed on 12/10/02:

i. Species E (type of cutting device): a microtome, i.e. claim 12.

ii. Species F (type of target-strands): a target substance embedded in a porous rod, i.e. claim 13.

iii. Species G (type of bundle of target-strands): proteins, i.e. claim 14.

iv. Species H ("stabilizing" material): epoxy, i.e. claim 18.

v. Species I (type of "incorporated" material): secondary enzyme (claim 28).

8. Claims 21-24, and 35-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to ***nonelected species***, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/10/02.

Priority

9. This application is a continuation of 09/145,140 filed 8/28/1998, which is a divisional of 08/927,974 filed 9/11/1997.

Maintained Rejection(s)

Claim Rejections - 35 USC § 102

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 11-16, 19, and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by the Stimpson (US Patent 6,037,186; *filing date 7/16/1997*).

> *The presently claim 11 recites a method of producing high density arrays of target substances. The method comprises the step of sectioning a bundle of target-strands that has been stabilized by embedding the bundle in a matrix. The target-strands comprise the target substances that are located within the bundle and are noted in a database. The sectioning step results in a high density arrays. It is noted that the term "matrix" as define by the specification as either a "a material in which target substances can be embedded or to which target substances can be attached to supply additional structural support"(see pg. 5, lines 22-23) or a material in which the bundle of target-strands are*

embedded for stabilization (see pg. 8, lines 10-16). Thus the broadest interpretation is being applied to the term "matrix".

Stimpson teaches a method to produce arrays of compounds (see e.g. Abstract; col. 1, 6-14; col. 3, lines 30-54; col. 4, lines 22-34). Two formats of producing the arrays of compounds are described. In one format the compounds (refers to the instant claimed target substances) of the array are immobilized to porous rod elements (refers to the instant claimed target-strands) and a bundle is formed by radial compression of the rods (refers to the instant claim 13) (see e.g. col. 3, lines 47-51; col. 4, lines 7-11). The compounds include biological compounds such as nucleic acid and proteins (refers to the instant claim 14) (see e.g. col. 3, lines 47-51; col. 7, lines 19-26). A sheath (refers to the instant claimed matrix) is applied to the bundle and the arrays are cut as slabs resulting in a high density array (refers to the instant claimed sectioning step) (see e.g. col. 8, lines 7-13; col. 9, lines 13-17; col. 12, lines 11-41). The reference sheath includes an adhesive compound. The reference teaches the important features use in selecting suitable adhesive for applying a sheath to the bundle (see e.g. col. 5, lines 56-64). The reference adhesive compound is a binding substance and encompasses the broadest interpretation of the term "matrix" of the instant claim (see e.g. col. 5, line 48 to col. 6, line 7; col. 8, lines 7-13). The location of the rods and array elements are noted by "marking" the rods (see e.g. col. 10, lines 58-60; col. 11, lines 18-31). The sectioning is performed by either a microtome device or laser (refers to claim 12) (see e.g. col. 12, lines 12-17 and lines 42-54). The thickness of the cut slabs is in the range of 0.2-1 mm thick (refers to claims 15 and 16) (see e.g. col. 9, lines 13-17; col. 12, lines 11-14). The array elements can be labels with either direct or direct labeling with enzymes

(col. 11, lines 46-59) (refers to claims 19 and 28). Therefore, the method of Stimpson is anticipated the presently claimed invention.

Claim Rejections - 35 USC § 103

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. Claims 11-16, 18-19, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Stimpson (US Patent 6,037,186) and Runge (US Patent 4,084,308).

> *The presently claim 11 recites a method of producing high density arrays of target substances. The method comprises the step of sectioning a bundle of target-strands that has been stabilized by embedding the bundle in a matrix. The target-strands comprise the target substances that are located within the bundle and are noted in a database. The sectioning step results in a high density arrays. It is noted that the term "matrix" as define by the specification as either a "a material in which target substances can be embedded or to which target substances can be attached to supply additional structural support"(see pg. 5, lines 22-23) or a material in which the bundle of target-strands are embedded for stabilization (see pg. 8, lines 10-16). Thus the broadest interpretation is being applied to the term "matrix".*

Stimpson teaches a method to produce arrays of compounds (see e.g. Abstract; col. 1, 6-14; col. 3, lines 30-54; col. 4, lines 22-34). Two formats of producing the arrays of compounds are described. In one format the compounds (refers to the instant claimed target substances) of the array are immobilized to porous rod elements (refers to the instant claimed target-strands) and a bundle is formed by radial compression of the rods (refers to the instant claim 13) (see e.g. col. 3, lines 47-51; col. 4, lines 7-11). The compounds include biological compounds such as nucleic acid and proteins (refers to the instant claim 14) (see e.g. col. 3, lines 47-51; col. 7, lines 19-26). A sheath (refers to the instant claimed matrix) is applied to the bundle and the arrays are

cut as slabs resulting in a high density array (refers to the instant claimed sectioning step) (see e.g. col. 8, lines 7-13; col. 9, lines 13-17; col. 12, lines 11-41). The reference sheath includes an adhesive compound. The reference teaches the important features use in selecting suitable adhesive for applying a sheath to the bundle (see e.g. col. 5, lines 56-64). The reference adhesive compound is a binding substance and encompasses the broadest interpretation of the term "matrix" of the instant claim (see e.g. col. 5, line 48 to col. 6, line 7; col. 8, lines 7-13). The location of the rods and array elements are noted by "marking" the rods (see e.g. col. 10, lines 58-60; col. 11, lines 18-31). The sectioning is performed by either a microtome device or laser (refers to claim 12) (see e.g. col. 12, lines 12-17 and lines 42-54). The thickness of the cut slabs is in the range of 0.2-1 mm thick (refers to claims 15 and 16) (see e.g. col. 9, lines 13-17; col. 12, lines 11-14). The array elements can be labels with either direct or direct labeling with enzymes (col. 11, lines 46-59) (refers to claims 19 and 28).

The method of Stimpson differs from the presently claimed invention by failing to include using an epoxy matrix to stabilize the bundle of rods for sectioning.

Runge teaches a method of first stabilizing bundle of rods by embedding them in epoxy and then slicing the bundle (see e.g. Abstract; col. 1, lines 42-62; col. 2, lines 44-60; col. 5, lines 1-16; fig. 1-3). The method is a simple technique for slicing a bundle of rods that can be use in both hand tool and mass-production machine environments (see e.g. col. 2, lines 13-16).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an epoxy matrix to stabilize the bundle for sectioning as taught by Runge in the method of Stimpson. One of ordinary skill in the art would have been motivated to include using an epoxy matrix to stabilize the bundle of rods for sectioning in the method of

Stimpson for the advantage of providing a simple technique for slicing a bundle of rods that can be use in both hand tool and mass-production machine environments (Runge: col. 2, lines 13-16). Additionally, both Stimpson and Runge disclose stabilizing the bundle of rods for sectioning (Stimpson: col. 4, lines 28-34; Runge: col. 1, lines 42-62). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Stimpson and Runge because the type of stabilizer use such as epoxy would be considered within the purview of the cited prior art.

Response to Arguments

14. Applicant's arguments directed to the rejection under 35 USC 102(e) as being anticipated by Stimpson (US Patent 6,037,186; *filing date 7/16/1997*) for claims 11-16, 19, and 28 were considered but they are not persuasive for the following reasons.

Applicant argues that the method of Stimpson does not anticipate the presently claimed method because Stimpson does not teach or suggest the limitation in claim 11 of "*a bundle of target-strands that has been stabilized by embedding the bundle in a matrix*". Thus the method of Stimpson does not anticipate the presently claimed method.

Applicant's arguments are not convincing since the method of Stimpson does anticipate the presently claimed method because Stimpson does suggest the limitation of "*a bundle of target-strands that has been stabilized by embedding the bundle in a matrix*". First, broadest interpretation are being apply to these term 'matrix' wherein the Webster's Dictionary define a 'matrix' for example as a binding substance. This interpretation is supported by the instant specification definition of the term 'matrix' wherein the 'matrix' is define as either "*a material*

in which target substances can be embedded or to which target substances can be attached to supply additional structural support" (see pg. 5, lines 22-23) or "*a material in which the bundle of target-strands are embedded for stabilization*" (see pg. 8, lines 10-16). Thus any substances that 'bind' to another substances would encompass the definition of the term 'matrix'. Second, Stimpson discloses that "*In some cases it may be desirable to use an adhesive compound to bind either the sheets in a stack or the layers of a rolled sheet together to form a cohesive structure*" (i.e. the adhesive compound (matrix) binds the rolled sheets (bundle of target-strand) into layers to form a cohesive structure) (col. 5, lines 48-50). The adhesive compound would encompass the Webster's Dictionary definition of the term 'matrix'. Thus, Stimpson does suggest the limitation of "*a bundle of target-strands that has been stabilized by embedding the bundle in a matrix*".

15. Applicant's arguments directed to the rejection under 35 USC 103(a) as being unpatentable over Stimpson (US Patent 6,037,186) and Runge (US Patent 4,084,308) for claims 11-16, 18-19, and 28 were considered but they are not persuasive for the following reasons.

Applicant alleges that the method combination of Stimpson and Runge is not obvious over the presently claimed method because neither Stimpson nor Runge teach or suggest the limitation in claim 11 of "*a bundle of target-strands that has been stabilized by embedding the bundle in a matrix*". Thus the method combination of Stimpson and Runge is not obvious over the presently claimed method.

Applicant's arguments are not convincing since the method combination of Stimpson and Runge is obvious over the presently claimed method because Stimpson does suggest the limitation of "*a bundle of target-strands that has been stabilized by embedding the bundle in a*

matrix". First, broadest interpretation are being apply to these term 'matrix' wherein the Webster's Dictionary define a 'matrix' for example as a binding substance. This interpretation is supported by the instant specification definition of the term 'matrix' wherein the 'matrix' is define as either "*a material in which target substances can be embedded or to which target substances can be attached to supply additional structural support*" (see pg. 5, lines 22-23) or "*a material in which the bundle of target-strands are embedded for stabilization*" (see pg. 8, lines 10-16). Thus any substances that 'bind' to another substances would encompass the definition of the term 'matrix'. Second, Stimpson discloses that "*In some cases it may be desirable to use an adhesive compound to bind either the sheets in a stack or the layers of a rolled sheet together to form a cohesive structure*" (i.e. the adhesive compound (matrix) binds the rolled sheets (bundle of target-strand) into layers to form a cohesive structure) (col. 5, lines 48-50). The adhesive compound would encompass the Webster's Dictionary definition of the term 'matrix'. Thus, Stimpson does suggest the limitation of "*a bundle of target-strands that has been stabilized by embedding the bundle in a matrix*".

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 571-272-0810. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mct
March 31, 2005

PADMASHRI PONNALURI
PRIMARY EXAMINER